IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: R. Timmis et al.	Attorney Docket No.: WEYE116514
Application No.: 09/700,037	Group Art Unit: 1651
Filed: July 2, 2001	Examiner: L.B. Lankford Jr.
Title: METHODS FOR CLASSIFICATION OF SOMATIC EMBRYOS	

RESPONSE TO EXAMINER'S ACTION MAILED FEBRUARY 11, 2003

Seattle, Washington 98101

May 6, 2003

TO THE COMMISSIONER FOR PATENTS:

Responsive to the Examiner's Action mailed February 11, 2003, please reconsider the application in view of the remarks that follow.

Claims 27-40 are currently pending and active in the above-identified application. Claims 27-40 are directed to a method for classifying plant embryo quality employing absorption, transmittance, or reflectance spectral data.

In accordance with the subject matter recited in Claim 27, the method involves the step of developing a classification model by performing a data analysis on collected spectral data. The data analysis develops a relationship between the collected spectral data and the quality of embryos of known embryo quality. After the classification model has been developed, spectral raw data of a plant embryo, or any portion thereof, of unknown embryo quality is acquired. The classification model is applied to the spectral data from the plant embryo of unknown quality in order to classify the quality of the plant embryo of unknown quality.

The Examiner's Action rejects Claims 27-40 under 35 U.S.C. § 112, first paragraph, as containing subject matter that is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The Examiner's Action specifically asserts that the

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applicants have not clearly established what the correlation is between the data collected and compared and the quality of an embryo. Based on this, the Examiner's Action asserts that it is unclear that applicants actually had within their possession a method for actually classifying plant embryo quality. Applicants respectfully traverse this rejection for the following reasons.

The outstanding rejection is based on the written description requirement of Section 112, first paragraph. There are several policy objectives behind this written description requirement. One objective is to clearly convey the information that an applicant has invented the subject matter, which is claimed. Another objective is to put the public in possession of what the applicant claims as the invention. To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.

Claims 27-40 recite "a method for classifying plant embryo quality." The Examiner's Action appears to be asserting that applicants have not clearly described a specific correlation between the acquired spectral raw data and the sought after quality of a plant embryo. Applicants assert that it is unnecessary to identify a specific correlation between the spectral raw data collected and the quality of an embryo in order to satisfy the written description requirement for the subject matter of Claims 27-40. As discussed above, Claim 27 recites a method for classifying plant embryo quality that includes the steps of first developing a classification model by applying a data analysis to spectral raw data of reference samples of plant embryos of known quality. The data analysis is performed by applying one or more classification algorithms to the spectral raw data to develop the classification model. After the classification model is developed, spectral data is collected from plant embryos of unknown embryo quality and then the developed classification model is applied to this spectral raw data in order to classify the

quality of the plant embryos of unknown embryo quality. This invention is broadly described in the specification at page 12, line 27-page 13, line 8.

More specifically, the specification at page 11, line 26-page 12, line 26 describes how spectral data is acquired for plant embryos of known quality. The specification at page 13, lines 3-30 describes how training sets are used in classification algorithms to develop a classification model. Reference is made back to the foregoing passages at page 11, line 26-page 12, line 26 and the description of how spectral raw data can be obtained from a plant embryo. This same technique is useful in collecting the spectral data from a plant embryo of unknown embryo quality. Finally, reference is made to page 12, line 35, through page 13, line 2, and to page 5, lines 19-27, where it is described that the spectral raw data from a plant embryo of unknown embryo quality is applied directly to the classification model, or optionally preprocessed, to allow classification of the quality of the plant embryo of unknown plant embryo quality.

In view of the foregoing written description regarding the invention of independent Claim 27, applicants assert that it is clear that applicants were in possession of the invention of Claims 27-40 directed to a method of classifying plant embryo quality. The present specification describes how a classification model is developed. The first paragraph of § 112 does not require that a specific example of a classification model be described. One skilled in the art reading applicants' specification would recognize that applicants had in their possession at the time of filing a method for classifying plant embryo quality comprising the recited steps. Accordingly, the Examiner should withdraw the outstanding rejection under 35 U.S.C. § 112, first paragraph.

Claims 27-40 are further rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that

applicants regard as the invention. For the following reasons, applicants assert that the rejection is improper.

35 U.S.C. § 112, second paragraph, requires applicants to claim the subject matter that applicants regard as their invention and to claim their invention in a manner that particularly points out and distinctly defines and metes and bounds of the subject matter that applicants consider their invention. The primary purpose of the requirement that applicants particularly point out and distinctly claim the invention is to ensure that the claim scope is clear so that the public is informed of the boundaries of what constitutes infringement. The Examiner is reminded that breadth of a claim is not to be equated with indefiniteness. The scope of the subject matter embraced by Claims 27-40 is clear and applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims; therefore, the claims satisfy 35 U.S.C. § 112, second paragraph.

As discussed above, what applicants claim as their invention is a method of classifying plant embryo quality that involves developing a classification model from spectral data obtained from plant embryos of known embryo quality. Spectral data is then collected from plant embryos of unknown quality, and the classification model is applied to the spectral data from plant embryos of unknown quality in order to classify the quality of the plant embryos of unknown quality. Claims 27-40 do particularly point out and distinctly claim the subject matter which applicants regard as the invention, namely, a method for classifying a plant embryo comprising the recited steps. Applicants have not specifically recited the correlation that is the classification model that is developed as part of the claimed method. It is not applicants' intent to claim a specific correlation between the spectral data collected and the quality of an embryo, but rather to claim an overall method of classifying plant embryo quality. Applicants assert that 35 U.S.C. § 112, second paragraph, does not require that applicants recite a specific "correlation"
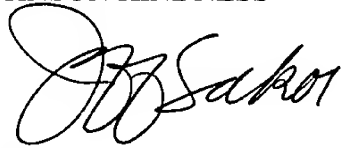
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in order to satisfy the requirements of the second paragraph of Section 112. Accordingly, the Examiner should withdraw the outstanding rejection.

In view of the foregoing, applicants assert that the specification and claims satisfy the requirements of 35 U.S.C. § 112, first and second paragraphs, and accordingly, the Examiner should withdraw the outstanding rejections and pass the application to allowance. If the Examiner has any questions regarding the above, the Examiner is asked to call applicants' attorney at the number listed below so that any outstanding issues can be resolved in a timely and efficient manner.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the below date.

Date: May 6, 2003

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RESPONSE TRANSMITTAL LETTER

Seattle, Washington 98101

TO THE COMMISSIONER FOR PATENTS:

A.   Response Transmittal

Transmitted herewith is a response to Examiner's Action mailed February 11, 2003, in the above-identified application. No additional claim fee is required, as shown below.

COMPUTATION OF FEE FOR CLAIMS AS AMENDED

	Claims Remaining After Amendment		Highest Number Previously Paid For		Present Extra		Rate		Additional Fee
Total Claims	14	-	20	=	0	x	18	=	0
Independent Claims	1	-	3	=	0	x	84	=	0
			TOTAL						$0

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the below date.

Date: May 6, 2003

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